Center Independent Research & Development: GSFC IRAD

Tunable laser absorption spectrometer

Completed Technology Project (2016 - 2018)

Project Introduction

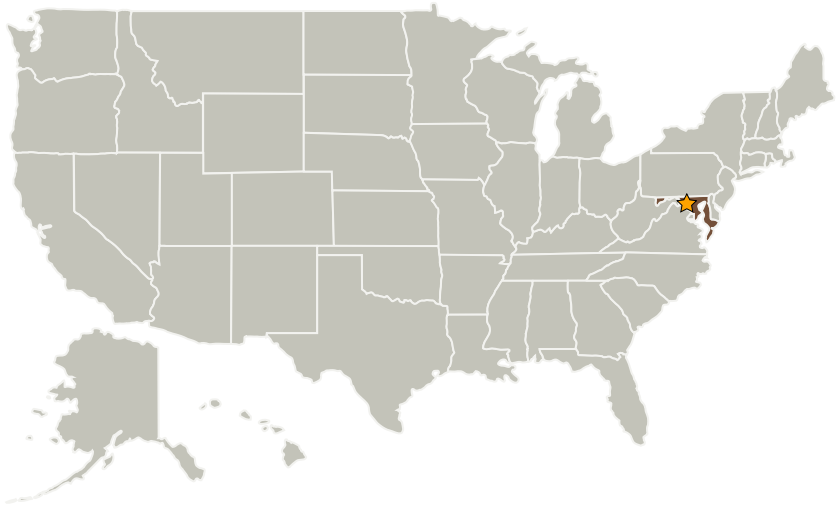
For this effort, we propose to develop a tunable laser spectrometer source for future NASA planetary missions. The proposed technology would improve the traditional concept of lidar instrument. This effort will focus on investigating the tunable laser transmitter concept.

This work greatly leverages our experience from developing trace-gas laser sounders. Specifically, we will investigate advanced tunable laser concepts.

Anticipated Benefits

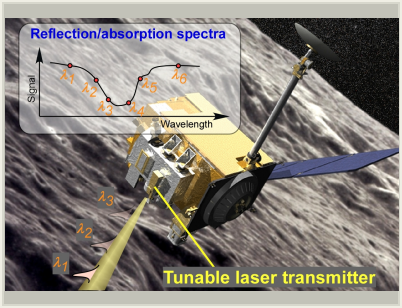
Development of lidar technology for planetary exploration

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations
Maryland



Tunable laser absorption spectrometer instrument concept

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Tunable laser absorption spectrometer

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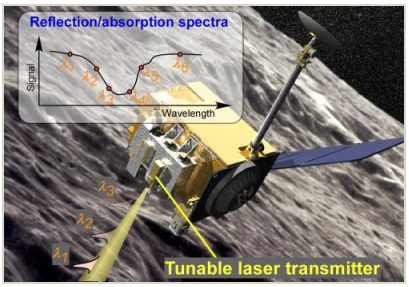
Images



Tunable laser absorption spectrometer instrument concept
Tunable laser absorption spectrometer instrument concept *(https://techport.nasa.gov/image/26323)*

Project Website:

http://aetd.gsfc.nasa.gov/

Organizational Responsibility

Responsible Mission Directorate:

Mission Support Directorate (MSD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Center Independent Research & Development: GSFC IRAD

Project Management

Program Manager:

Peter M Hughes

Project Managers:

Terence A Doiron
Brook Lakew
Michael J Amato

Principal Investigator:

Kenji Numata

Co-Investigators:

Haris Riris
Xiaoli Sun
Stewart T Wu

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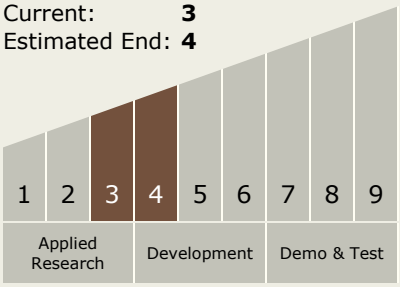
Technology Maturity (TRL)

Start: **3**
Current: **3**
Estimated End: **4**



Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.1 Remote Sensing Instruments/Sensors
    - TX08.1.5 Lasers

Target Destinations

Earth, The Moon, Others Inside the Solar System